

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US00/00847

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B30B11/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B30B F15B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 40 03 016 A (REITTER ERHARDT) 8 August 1991 (1991-08-08)	1-4,6,7, 10,19, 22,23
Y	abstract; figure 1	5,8,9, 11-18, 20,21, 24-28
A	--- US 4 482 307 A (HERREN DIETMAR ET AL) 13 November 1984 (1984-11-13) cited in the application	1,13,22
Y	column 4, line 17 - line 41; figures	5,9,17, 18,26-28
Y	--- US 2 509 783 A (RICHARDSON LLOYD D) 30 May 1950 (1950-05-30) column 2, line 53 -column 3, line 7; figure 1 --- -/--	8,11,12, 20,21

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

T later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

* & * document member of the same patent family

Date of the actual completion of the International search

20 May 2003

Date of mailing of the International search report

28/05/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Belibel, C

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00847

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	FR 1 424 583 A (DBA SA) 14 January 1966 (1966-01-14) abstract; figures ---	13-16
A	US 5 551 856 A (KATAGIRI TAKESHI) 3 September 1996 (1996-09-03) column 5, line 53 -column 6, line 16; figures 1-5 ---	1,13,22
Y		24,25
A	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 03, 27 February 1998 (1998-02-27) & JP 09 295196 A (TSUKIMURA ENG:KK), 18 November 1997 (1997-11-18) abstract; figures 1-5 ---	1,10-13, 19-22
A	US 5 238 375 A (HIRAI KEITA) 24 August 1993 (1993-08-24) abstract; figures 1-7 ---	1,13,22
A	WO 01 08864 A (MATERIALS INNOVATION INC) 8 February 2001 (2001-02-08) cited in the application abstract; figures ---	1,13,22
A	EP 0 586 028 A (MANNESMANN AG) 9 March 1994 (1994-03-09) cited in the application abstract; figures -----	1,13,22

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US/00847

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 4003016	A	08-08-1991	DE 4003016 A1	08-08-1991
US 4482307	A	13-11-1984	DE 3142126 A1	11-05-1983
			EP 0077897 A2	04-05-1983
US 2509783	A	30-05-1950	NONE	
FR 1424583	A	14-01-1966	NONE	
US 5551856	A	03-09-1996	JP 2082347 C	23-08-1996
			JP 6142993 A	24-05-1994
			JP 7098279 B	25-10-1995
JP 09295196	A	18-11-1997	JP 3043277 B2	22-05-2000
US 5238375	A	24-08-1993	JP 5140609 A	08-06-1993
			DE 4203572 A1	19-11-1992
WO 0108864	A	08-02-2001	AU 6749500 A	19-02-2001
			WO 0108864 A1	08-02-2001
EP 0586028	A	09-03-1994	DE 4227640 A1	24-02-1994
			AT 138317 T	15-06-1996
			DE 59302669 D1	27-06-1996
			EP 0586028 A1	09-03-1994